

REMARKS

Entry of the amendment instructions above, and favorable reconsideration and allowance of this reissue application are respectfully requested.

At the outset, applicants' undersigned attorney wishes to express his sincere appreciation for the time and courtesies extended by Examiner Nguyen during the personal interview of June 7, 2001. It is earnestly believed that the interview materially advanced prosecution of this application.

The amendment instructions above conform to the discussions with Examiner Nguyen. In this regard, for clarity of the record, claims 22-46 have been cancelled and replaced with new claims 47-53, of which only claim 47 is in independent form. The Examiner will also observe that, except for the changes noted below, new claims 47-53 correspond substantively to previous claims 22-24, 26-27 and 34-35, respectively.

New claim 47, however, differs from previous claim 22 in that the second alkali concentration is now recited as being between about 15 g/l to about 60 g/l. greater than the first alkali concentration. Support for such a range may be found in the reissue specification at column 2, last line bridging column 3, line 11. More specifically, it is disclosed that at column 3, line 2-3 that the "first cooking liquor" has a first effective alkali concentration of "great than 10 g/l" whereas at column 3, lines 9-10 it is disclosed that the "second cooking liquor" has a second effective alkali concentration which is greater than 25 g/l and greater than the first concentration. Hence, the disclosed second alkali concentration must, at the low end of the range, be about 15 g/l (i.e., 25 g/l for the second concentration minus 10 g/l for the lowest first concentration). Support for the upper limit of 60 g/l can be found in the reissue application at column 4, lines 8-10.

With regard to claims 34 and 35, it will be observed that the upper temperature limit of claim 34 has now been recited as 160°C which finds support at column 9, line 31,

whereas the lower temperature limit of claim 35 has now been recited as 140°C which finds support at column 10, line 4.

Claims 1-21 and 47-53 are therefore pending in this reissue application, of which, claims 1-21 have been allowed. As will become evident from the following discussion, new claims 47-53 presented herewith are similarly allowable.

Attachment A hereto is a Supplemental Reissue Declaration of the inventor, Auvo K. Kettunen, which is believed to address the informalities of the original Reissue Declaration noted by the Examiner in paragraphs 1 and 2 of the Official Action. Thus, it is submitted that the Supplemental Reissue Declaration submitted herewith is in full compliance with the requirements of Rule 75.

The only issues remaining to be resolved in this application are the Examiner's rejection of the previous claims based on 35 USC §§112 and 251. Applicants suggest that the new claims submitted above render moot the Examiner's rejections in this regard. Specifically, as note above and during prosecution to date, the subject matter of new claims 47-53 is fully disclosed in the applicants' '856 patent and the present reissue application based thereon.

With regard to the Examiner's questions and comments raised with regard to "cooking" in Zone II of the present invention, there are attached hereto Declarations of Auvo K. Kettunen and C. Bertil Stromberg presented under the provisions of Rule 132. (Attachments B and C, respectively). As noted in the Kettunen Declaration of Attachment B, the "cooking" of wood chips can occur under various conditions. In this regard, wood chip cooking is a chemical reaction which, like any other chemical reaction, requires three criteria exist, namely: temperature, time and (in the case of wood chip cooking) effective alkali concentration. The three criteria of temperature, time and effective alkali concentration needed to effect wood chip cooking have been well known to those in this art. In this regard, as early as 1965, it was known that, at temperatures below 150°C, at least as low as 140°C, wood chip "cooking" takes place (See, copy of Pulping Processes attached to the Kettunen Declaration). As work to

better understand the chemistry of kraft cooking continued, the study of the criteria necessary for successful processing of wood chips continued. In 1992, the results of a study by Pascale Gouttenoire et al were presented at the 1992 TAPPI Pulping Conference (See, the Gouttenoire et al publication attached to the Kettunen Declaration). These results indicate pulp produced from cooking the wood chips in a first stage at the low temperature of 120°C was greatly improved over pulp produced when the first cooking stage was conducted at higher temperatures.

Therefore, Mr. Kettunen concludes that, according to his firm technical belief and understanding, cooking can and does occur at temperatures of 120° to 160°C such as disclosed in the '856 patent at column 9, lines 30-32 when the two additional criteria of effective alkali concentration and time are present. Thus, when the conditions of the effective alkali concentrations of at least 10g/l as disclosed in the '856 patent column 2, line 67 through column 3, line 3, in conjunction with temperatures of above 120°C and sufficient time of at least five minutes usually one-half to three hours (see the '856 patent at column 9, lines 32-34) are present, wood chips undergo "cooking", regardless of the name tag that may be given the vessel or the zone within the vessel in which such criteria exist.

The Kettunen Declaration is further buttressed by the evidence provided by way of the Stromberg Declaration (Attachment C). Specifically, the Examiner has raised an issue with respect to whether or not cooked wood chips retain their chip-like structure. That is, the Examiner's has advanced an interpretation of the statement, for example, at column 10, line 2 of the '856 patent that "chip and liquor" are discharged from the impregnation vessel to mean that no cooking of the chips can occur. However, the factual evidence provided by the Stromberg Declaration demonstrates unequivocally that "cooked" chips do in fact retain their chip structures in the absence of mechanical agitation.

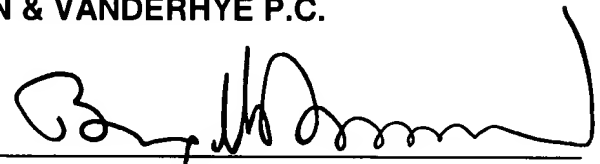
In summary, therefore the amendments, remarks and evidence presented herewith demonstrate that all claims now pending in this reissue application are in condition for allowance. Such favorable action is therefore solicited.

Should any small matter remain outstanding, however, the Examiner is encouraged to telephone the applicant's undersigned attorney so that the same may be resolved without the necessity of an additional written action and reply.

Respectfully submitted,

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APPENDIX I

New Claims for Reissue Application Serial No. 09/533,904

Sub B' 47. (New) A method for producing pulp, comprising the steps of:

- A*
- 1 providing a fiber material, a transport liquid and an impregnation zone;
 - 2 providing a digester to facilitate a cooking reaction, the digester having at least one screen girdle section disposed therein, the digester having a first cooking zone and a second cooking zone;
 - 3 providing a total amount of cooking liquor required for the cooking reaction;
 - 4 transporting the fiber material and the transport fluid to the impregnation zone;
 - 5 heating and impregnating the fiber material disposed in the impregnation zone;
 - 6 transferring the heated and impregnated fiber material from the impregnation zone to the first cooking zone;
 - 7 supplying a first portion of the total amount of the cooking liquor to the impregnation zone and the first cooking zone;
 - 8 obtaining a first effective alkali concentration in the first cooking zone;
 - 9 passing the fiber material and the cooking liquor through the first cooking zone; and
 - 10 supplying a second portion of the total amount of the cooking liquor to the second cooking zone to obtain a second effective alkali concentration in the second cooking zone, the second alkali concentration being between about 15 grams/liter and about 60 grams/liter greater than the first effective alkali concentration.

23 where
48. (New) The method according to claim 47 wherein the method is a continuous process.

22 wherein EAF 20-50914

²⁴49. The method according to claim ²²47 wherein the method further comprises the steps of withdrawing a spent liquor from the screen girdle section and transferring the spent liquor to the impregnation zone.

²⁵50. (New) The method according to claim ²²47 wherein the second alkali concentration is between about 20 grams/liter and about 50 grams/liter greater than the first effective alkali concentration.

²⁶51. (New) The method according to claim ²²47 wherein the second alkali concentration is between about 30 grams/liter and about 40 grams/liter greater than the first effective alkali concentration.

²⁷52. (New) The method according to claim ²²47 wherein the first temperature is between about 150° C. and about 160° C.

²⁸53. (New) The method according to claim ²²47 wherein the second temperature is between about 140° C. and about 150° C.
